Orpiment As_2S_3

Crystal Data: Monoclinic. *Point Group:* $2/m$. Commonly in foliated columnar or fibrous aggregates, with cleavages as much as 60 cm across; may be reniform or botryoidal; also granular or powdery; rarely as prismatic crystals, to 10 cm. *Twinning:* On {100}.

Physical Properties: *Cleavage:* Perfect on {010}, imperfect on {100}; cleavage lamellae are flexible. *Tenacity:* Sectile. Hardness = 1.5–2 VHN = n.d. D(meas.) = 3.49 D(calc.) = 3.48

Optical Properties: Transparent. *Color:* Lemon-yellow to golden or brownish yellow. *Streak:* Pale lemon-yellow. *Luster:* Resinous, pearly on cleavage surface. *Optical Class:* Biaxial (–). *Pleochroism:* In reflected light, strong, white to pale gray with reddish tint; in transmitted light, Y = yellow, Z = greenish yellow. *Orientation:* $X = b$; $Z \wedge c = 2°$. *Dispersion:* $r > v$, strong. $\alpha = 2.4$ (Li). $\beta = 2.81$ (Li). $\gamma = 3.02$ (Li). 2V(meas.) = 76° *Anisotropism:* Barely observable because of strong internal reflections.

R_1–R_2: (400) 33.0–36.5, (420) 31.0–35.2, (440) 28.9–33.9, (460) 27.4–31.5, (480) 26.0–30.3, (500) 24.9–29.3, (520) 24.0–28.4, (540) 23.3–27.8, (560) 22.8–27.3, (580) 22.3–26.9, (600) 22.0–26.5, (620) 21.7–26.3, (640) 21.5–26.0, (660) 21.2–25.7, (680) 21.0–25.5, (700) 20.8–25.3

Cell Data: *Space Group:* $P2_1/n$. $a = 11.475(5)$ $b = 9.577(4)$ $c = 4.256(2)$ $\beta = 90°41(5)'$ Z = 4

X-ray Powder Pattern: Baia Sprie (Felsőbánya), Romania.
4.85 (100), 4.02 (50), 2.47 (40), 1.755 (40), 3.22 (30), 2.79 (30), 2.72 (30)

Chemistry: Stated to be very near As_2S_3.

Occurrence: In low-temperature hydrothermal veins, hot springs and fumaroles; also commonly as an alteration product of arsenic minerals, especially realgar.

Association: Stibnite, realgar, arsenic, calcite, barite, gypsum.

Distribution: Not uncommon in small amounts, but rare in fine specimens. In the USA, crystallized from Mercur, Tooele Co., Utah; in Nevada, at the Getchell mine, Humboldt Co.; from the White Caps mine, Manhattan, Nye Co.; with fine examples from in the Twin Creeks mine, Humboldt Co. At Tajov, Slovakia. From Křeševo, Bosnia-Herzegovina. At Alšar (Allchar), near Rošden, Macedonia. Fine crystals from the Zarshuran gold deposit, 35 km north of Takab, northwestern Iran. From Jelamerk, Turkey. In Russia, at Loukhoumi, Caucasus Mountains, and Men-Kyule, Sakha. From Racha Luyumi, Georgia. Large crystals from the Shimen mine, 33 km southeast of Shimen, Hunan Province, China. Exceptional specimens from the Quiruvilca mine, La Libertad, Peru.

Name: From the Latin *auripigmentum*, *golden paint*, in allusion to the color.

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